

CARBON TETRACHLORIDE

Also known as: Carbon tet, Perchloromethane, CCl_4 , Carbon chloride, Tetrachloromethane, Perc
Chemical reference number (CAS): 56-23-5

WHAT IS CARBON TETRACHLORIDE?

Carbon tetrachloride (Carbon tet) is a non-flammable colorless liquid with a heavy, sweet odor. Before 1970, carbon tet was widely used as a cleaning fluid in home and industry. Until 1986, the chemical was used as a grain fumigant. Carbon tet is still used to manufacture propellants and other industrial chemicals. In homes, carbon tet may be found in containers of spot remover or in fire extinguishers made before 1970.

Carbon tet evaporates quickly and is heavier than water. If carbon tet is spilled in lakes or streams, most of it sinks. If spilled on soil, most of the chemical will evaporate and the vapors will gather near the ground surface.

HOW ARE PEOPLE EXPOSED TO CARBON TETRACHLORIDE?

Drinking/Eating: People are most often exposed to carbon tet in the environment by drinking contaminated groundwater. Carbon tet may contaminate groundwater near locations where the chemical was improperly disposed. Since the compound is heavy, some of the spilled liquid will sink through soil and enter groundwater. Carbon tet does not move easily with groundwater. Plants do not take up or store carbon tet when they grow in contaminated soil.

Touching: Carbon tet can be absorbed through the skin if a person handles the chemical or contaminated soil, or bathes in contaminated water.

Breathing: Carbon tet evaporates easily from water. Therefore, a person may be exposed to its vapors when they bathe, cook, or wash with contaminated water.

WHAT STANDARDS REGULATE CARBON TETRACHLORIDE?

Water: The state and federal drinking water standards for carbon tet are set at 5 parts per billion (ppb). We suggest you stop drinking water that contains more than 5 ppb of carbon tetrachloride (tet).

If levels of carbon tet are very high in your water, you may also need to avoid washing, bathing or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standard has been set for the amount of carbon tet that is allowed in the air of homes. We use a formula to convert workplace limits to suggested home limits. Based on the formula, we recommend the level of carbon tet in air be no higher than 0.11 part per million (ppm). Most people can't smell carbon tet until the level reaches 10 ppm. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of carbon tet that can be released by industries.

WILL EXPOSURE TO CARBON TETRACHLORIDE RESULT IN HARMFUL HEALTH EFFECTS?

People can experience the following symptoms immediately or shortly after breathing air containing 100 ppm of carbon tet for 30 minutes or drinking as little as 1 milliliter of carbon tet (about an eye dropper full):

- Liver or kidney problems that may last many days after the exposure
- Blurred vision, dizziness, confusion and nerve damage
- Nausea and vomiting
- Irregular heartbeat and changes in blood pressure

The following health effects can occur after several years of exposure to carbon tet:

Cancer: Higher levels of liver cancer have been seen in people who were exposed to carbon tet in the workplace. Carbon tet caused liver cancer in laboratory animals.

Reproductive Effects: None have yet been noted in animals or humans.

Organ Systems: People exposed to high levels of carbon tet may experience nerve damage, digestive disorders, weight loss, tiredness, confusion, depression, loss of color vision and liver damage.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking. Previous exposure to barbiturates may increase the effects of exposure.

It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO CARBON TETRACHLORIDE?

Carbon tet can be measured in exhaled breath, blood, fat and other tissues. The tests will confirm exposure but will not predict future health effects. People who are regularly exposed to carbon tet may benefit from having their doctor monitor their blood count, liver function and kidney function.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-222-1222
- Your local public health agency
- Division of Public Health, BEOH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://dhfs.wisconsin.gov/eh>



Prepared by the
Wisconsin Department of Health and Family Services
Division of Public Health, with funds from the
Agency for Toxic Substances and Disease Registry,
Public Health Service,
U.S. Department of Health and Human Services.

(POH 4590 Revised 12/2000)